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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/441,539	11/16/1999	STEVEN G. APEL	99-40170-US	4490

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MORGAN, LEWIS & BOCKIUS LLP
1701 MARKET STREET
PHILADELPHIA, PA 19103-2921

EXAMINER

BROWN, RUEBEN M

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/441,539	APEL ET AL.	
	Examiner	Art Unit	
	Reuben M. Brown	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
 5) ☒ Claim(s) 31-36 is/are allowed.
 6) ☒ Claim(s) 27,28 and 30 is/are rejected.
 7) ☒ Claim(s) 29 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/19/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Restriction requirement in the reply filed on 6/21/04 is acknowledged.
2. Claims 1-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/21/2004.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 27-28 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon, (U.S. Pat # 3,919,479), in view of Fardeau, (U.S. Pat # 5,574,962) and Abrams, (U.S. Pat # 5,835,634).

Considering claim 27, the claimed method for correlating a first packet of a feature waveform from an unknown source with a second packet of feature waveforms from a known source, in order to associate a known source with an unknown source comprising:

‘determining at least three correlation values by correlating features associated with a first and second packets reads on the disclosure of Moon, digitized segments (i.e., packets) of unknown TV and/or radio broadcast signals are compared (i.e., correlated to) digitized segments (i.e., reference signals) of known TV and/or radio broadcast signals, (see col. 5, lines 30-60 & col. 6, lines 1-25).

However, Moon does not discuss that the method correlates features using 3 frequency bands from the waveform. Nevertheless, Fardeau teaches a method for automatically identifying a radio or TV broadcast, including detecting embedded signals across a band of frequencies, (Abstract; col. 6, lines 21-41; col. 7, lines 1-5; col. 8, lines 41-52). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Moon with the feature of detecting features across a range of frequency bands, for the desirable improvement of more precisely identifying the waveform, as taught by Fardeau, col. 3, lines 17-45.

As for the additionally claimed feature of computing weighting values in accordance with the correlation features from the first and second packets and computing a distance value representative of the differences between the correlation values & weighted values, the

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combination of Moon & Fardeau do not provide such a teaching. However, Abrams, which is also directed to image recognition, teaches using weighted differences of comparison values, (col. 5, lines 10-65 & col. 6, lines 1-8). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the combination of Moon & Fardeau to utilize a weighting function to more accurately emphasize the difference in importance of various comparison values, as taught by Abrams.

Regarding the further claimed feature of then associating the unknown packets with known source packets based upon the calculated weighted distance value, Abrams teaches that using the Example Weight Table, a Net Bits Different is compared to a certain score, in order to determine if a successful match has been found, which meets the claimed subject matter, see col. 6, lines 26-66.

Considering claim 28, Official Notice is taken that at the time the invention was made, standard deviation was a very well known technique in statistical analysis. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the combination of Moon, Fardeau & Abrams, using the standard deviation in the well-known benefit of determining the probability of first packet being successfully matched with the second packet, which is a more accurate function than simply using the weighted average of differences values.

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Considering claim 30, Abrams teaches successfully associating a match if the Net Bit Different is less than or equal to a value, (i.e., threshold), which reads on the claimed subject matter, (col. 6, lines 37-40).

Allowable Subject Matter

5. Claim 29 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 31-36 are allowed over prior art of record. Considering claim 31, as pointed in the rejection of claim 27, the combination of Moon, Fardeau & Abram teach waveform identification using a plurality of weighted correlation values. However, prior art of record does not additionally teach or reasonably suggest the further claimed features of computing the Euclidean distance values ($D(n-1)$), representative of differences between the first and second packets of the first, second and third correlation values; determining at least fourth, fifth and sixth correlation values by correlating features from third and fourth packets, wherein the fourth correlation value is determined by correlating features associated with the first frequency band from the third and fourth packets, the fifth correlation value is determine by correlating features associated with the second frequency band from the third and fourth packets, and the sixth correlation value is determined by correlating features from the third and fourth packets;

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computing a Euclidean distance ($D(n)$) representative of differences between the third and fourth packets from the fourth, fifth & sixth correlation values; updating the Euclidean distance value ($D(n)$), using the Euclidean distance values ($D(n-1)$); and associating the third packet with the known source in accordance with the updated Euclidean distance value ($D(n)$).

Considering claims 32-36, the instant claims depend from an allowed claim, and are therefore allowable at least for the same reasons.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- A) Takahashi Teaches pattern matching using correlation values.
- B) Microsoft Computer Dictionary Definition of standard deviation.
- C) Webster's Collegiate Dictionary Definition of standard deviation.

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Any response to this action should be mailed to:

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or faxed to:

(703) 872-9306, (for formal communications intended for entry)

Or:

(703) 746-6861 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")


*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).*

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Reuben M. Brown whose telephone number is (703) 305-2399.
The examiner can normally be reached on M-F (8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Christopher Grant can be reached on (703) 305-4755. The fax phone numbers for the
organization where this application or proceeding is assigned is (703) 872-9306 for regular
communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the receptionist whose telephone number is (703) 305-4700.

Reuben M. Brown


REUBEN M. BROWN
PATENT EXAMINER